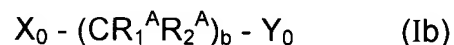


**I. AMENDMENTS TO THE CLAIMS:**

1 to 16. (Canceled)

17. (Currently Amended) A method to form films having hydro and oil repellant properties on surfaces of objects, said method comprising applying to said surfaces aqueous dispersions of fluorinated oligourethanes having a number average molecular weight lower than or equal to 9,000, determined by vapor pressure osmometry, said oligourethanes having a branched structure, optionally crosslinked, formed of the following monomers and macromers:

- a) aliphatic, cycloaliphatic or aromatic polyisocyanates, having NCO functionality, determined by titration with dibutylamine-HCl (ASTM D2572), higher than 2;
- b) bifunctional hydrogenated monomers wherein the two functions are chemically different, having formula:



wherein:

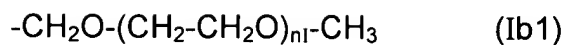
$R_1^A$  and  $R_2^A$ , equal to or different from each other, are H ~~[[.]]~~ or aliphatic radicals from 1 to 10 carbon atoms,

b is an integer in the range 1-20,

$X_0 = X_A H$  with  $X_A = O$  ~~[[.]]~~ or S,

$Y_0$  is ~~anionic~~ SO<sub>3</sub>, COOH or ~~cationic salifiable function~~ a tertiary aminic group NR'<sub>N</sub>R''<sub>N</sub>, wherein R'<sub>N</sub> and R''<sub>N</sub>, equal to or different from each other, are a linear or branched C<sub>1</sub>-C<sub>6</sub> alkyl, or, when in the formula (Ib)  $X_0 = OH$ ,

$b = 1$ ,  $R_1^A = R_2^A = H$ ,  $Y_0$  is a hydrophilic group having formula



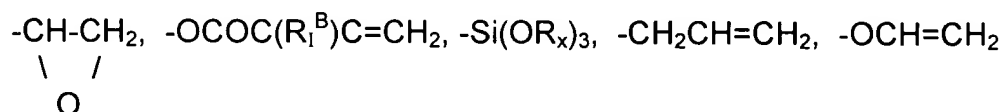
wherein nI is an integer in the range 3-20;

and one or more of the following compounds:

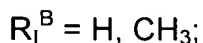
- c) bifunctional hydroxyl (per)fluoropolyethers having a number average molecular weight in the range 400-3,000;
- e) monofunctional hydroxyl (per)fluoropolyethers ( $e^0$ ) or monofunctional hydroxyl (per)fluoroalkanes ( $e'$ ), said compounds ( $e^0$ ) and ( $e'$ ) having a number average molecular weight in the range 300-1,000,

and optionally the following compounds:

- d) hydrogenated monomers capable to insert a crosslinkable chemical function in the oligourethane, having the formula (Ib), wherein  $R_1^A$ ,  $R_2^A$ , b and  $X_0$  are as above defined and  $Y_0$  is selected from the following functional groups:



wherein



$\text{R}_x$  is a saturated  $\text{C}_1\text{-C}_5$ ;

- d<sup>1</sup>) blocking agents of the NCO group, wherein the blocking agent is one or more compounds selected from the group consisting of ketoximes, phenols, mono- di-alkyl substituted phenols with an alkylic chain from 1 to 8 carbon atoms, pyrazol, caprolactam, ethylmalonate, acetylacetone and ethylacetoacetate.

18. (Previously Presented) The method according to claim 17, wherein films are obtained by crosslinking with polyisocyanates oligourethanes consisting essentially of components a), b), and c).

19. (Previously Presented) The method according to claim 17, wherein films are obtained by thermally or photochemically crosslinking oligourethanes, said oligourethanes consisting essentially of components a), b), c), and d).

20. (Previously Presented) The method according to claim 17, wherein films are obtained by thermally crosslinking oligourethanes, said oligourethanes consisting essentially of components a), b), c), and d<sup>1</sup>).

21. (Previously Presented) The method according to claim 17, wherein the a) aliphatic, cycloaliphatic or aromatic polyisocyanates have NCO functionality, determined by titration with dibutylamine-HCl (ASTM D2572), in the range 3-4.

22. (Previously Presented) The method according to claim 17, wherein for b), b is an integer in the range 1-10.

23. (Previously Presented) The method according to claim 17, wherein the number average molecular weight of c) bifunctional hydroxyl (per)fluoropolyethers (PFPE diols) is in the range 700-2,000.

24. (Previously Presented) The method according to claim 17, wherein the number average molecular weight of e) monofunctional hydroxyl (per)fluoropolyethers ( $e^0$ ) or monofunctional hydroxyl (per)fluoroalkanes ( $e'$ ) is in the range 400-800.

25. (Canceled)

26. (Previously Presented) The method according to claim 17, wherein films are obtained by crosslinking with polyisocyanates oligourethanes consisting essentially of components a), b), c), and e).

27. (Previously Presented) The method according to claim 17, wherein films are obtained by crosslinking with thermally or photochemically oligourethanes, said oligourethanes consisting essentially of components a), b), c), d), and e).

28. (Previously Presented) The method according to claim 17, wherein films are obtained by thermally crosslinking oligourethanes consisting essentially of components a), b), c),  $d^I$ ), and e).

29. (Previously Presented) The method according to claim 18, wherein component c) is substituted with component e).

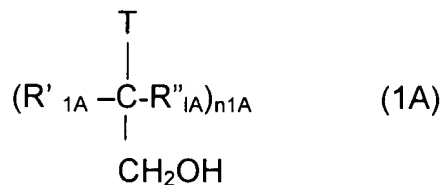
30. (Previously Presented) The method according to claim 19, wherein component c) is substituted with component e).

31. (Previously Presented) The method according to claim 20, wherein component c) is substituted with component e).

32. (Previously Presented) The method according to claim 17, wherein the amounts of the components a) – c) are the following:

- component a): 10-70% by weight based on the total dry oligourethane, component b): the moles of b) are in a ratio with the moles of the NCO groups of a) ranging from 1/3: 1 to 2/3: 1;
- component c): the moles of the hydroxyl groups of component c) are in a ratio with the moles of the residual free NCO groups (the difference between the total ones and those reacted with b)) in the range 3-1.1; the component c) can also be absent and in this case component e) is present; when c) is absent, the amount by moles of the components e) + d) + d<sup>I</sup>) is in a ratio 1 : 1 with the moles of residual NCO (the difference between the initial total moles of a) and the moles of a) reacted with b)), and component e) must be present in an amount of at least 30% by weight based on the dry product;
- when component c) is present the total moles of the components d) + d<sup>I</sup>) + e) are in a percentage in the range 0-90% with respect to the moles of the component b).

33. (Previously Presented) The method according to claim 17, wherein the monomers mentioned in b) have the function  $X_AH$  with  $X_A = O$  and the following structure formula:

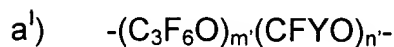


wherein T is  $SO_3H$ ,  $COOH$ , or a tertiary aminic group  $NR'_N R''_N$ , wherein  $R'_N$  and  $R''_N$  equal to or different from each other, are a linear or branched  $C_1$ - $C_6$  alkyl,  $R'_{1A}$  and  $R''_{1A}$ , equal to or different from each other, are hydrogen or a linear or branched  $C_1$ - $C_4$  alkyl;  $n1A$  is an integer in the range 1-10.

34. (Previously Presented) The method according to claim 33, in formula (1A) T is a tertiary aminic group.

35. (Currently Amended) The method according to claim 17, wherein the bifunctional (per)fluoropolyethers mentioned in c) have one or more of the following units statistically distributed along the chain:  $(C_3F_6O)$ ,  $(CFYO)$  wherein Y is  $F_1$  [[or]]  $CF_3$ ,  $(C_2F_4O)$ , or  $(CR_4R_5CF_2CF_2O)$  wherein  $R_4$  and  $R_5$  are equal to or different from each other selected from H, Cl, and one fluorine atom of the perfluoromethylene unit can be substituted with H, Cl or (per)fluoroalkyl, having from 1 to 4 carbon atoms.

36. (Previously Presented) The method according to claim 35, wherein the (per)fluoropolyethers are the following, with the perfluorooxyalkylene units statistically distributed along the chain:

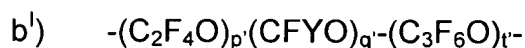


wherein  $m'$  and  $n'$  are integers such as to give the above mentioned molecular weights, and

(i)  $m'/n'$  is in the range 5-40; or

(ii)  $n'$  can also be 0; and

Y is F or  $CF_3$ ;



wherein  $p'$  and  $q'$  are integers such that  $p'/q'$  ranges from 5 to 0.3 and such that the molecular weight is within the above mentioned limits; and wherein:

(i)  $t'$  is an integer with the meaning of  $m'$ ;

(ii)  $t'$  can be 0 and  $q'/(q'+p'+t')$  is equal to 1/10 or lower; or

(iii) the  $t'/p'$  ratio ranges from 0.2 to 6; and

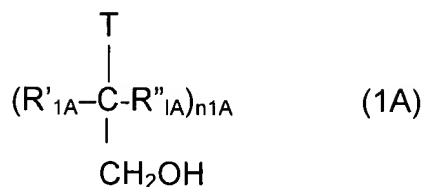
Y is F or  $CF_3$ ;



wherein  $R_4$  and  $R_5$  are equal to or different from each other and selected from H, Cl; the molecular weight such as to be within the above mentioned limits, and one fluorine atom of the perfluoromethylene unit can be substituted with H, Cl or (per)fluoroalkyl;

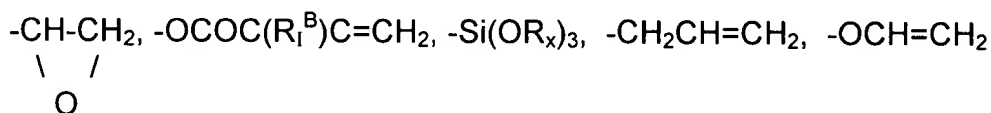
the end groups of the bifunctional (per)fluoropoly-ethers c), equal to or different from each other, have formula  $HO(CH_2CH_2O)_{x0}CH_2-$ , wherein  $x0$  is an integer from 0 to 4.

37. (Previously Presented) The method according to claim 17, wherein the monomers d) have formula (1A)



wherein:

T is  $\text{Y}_0$ , wherein  $\text{Y}_0$  is selected from the following functional groups:



wherein

$\text{R}_1^{\text{B}} = \text{H}, \text{CH}_3$ ;

$\text{R}_x$  is a saturated  $\text{C}_1\text{-C}_5$  alkyl;

$\text{R}'_{1\text{A}}$  and  $\text{R}''_{1\text{A}}$ , equal to or different from each other, are hydrogen or a linear or branched  $\text{C}_1\text{-C}_4$  alkyl;

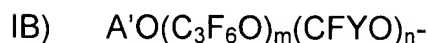
$n1\text{A}$  is an integer in the range 1-10; and

the OH group can optionally be substituted with an -SH group.

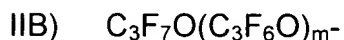
38. (Previously Presented) The method according to claim 35, wherein the component e) is formed of hydroxyl mono-functional (per)fluoropolyethers, said (per)fluoropolyethers having one or more (per)fluorooxyalkylene units as indicated in claim 35.



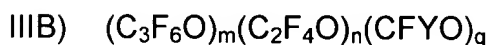
39. (Previously Presented) The method according to claim 38, wherein the (per)fluoropolyethers are the following, wherein the units are statistically distributed along the chain:



wherein Y is  $-F$ ,  $-CF_3$ ;  $A' = -CF_3$ ,  $-C_2F_5$ ,  $-C_3F_7$ ,  $-CF_2Cl$ ,  $C_2F_4Cl$ ; the  $C_3F_6O$  and  $CFYO$  units are randomly distributed along the (per)fluoropolyether chain, m and n are integers, the m/n ratio is  $\geq 2$ ;



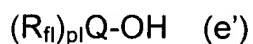
wherein m is an integer, wherein the number average molecular weight is that above mentioned;



wherein Y is equal to  $-F$ ,  $-CF_3$ ; m, n and q, different from zero, are integers such that the number average molecular weight is that indicated for the component e);

the end group being  $HO(CH_2CH_2O)_{x0}CH_2-$  wherein  $x0$  is an integer in the range 0-4.

40. (Previously Presented) The method according to claim 17, wherein the component e) is formed of hydroxyl monofunctional (per)fluoroalkanes having the formula:

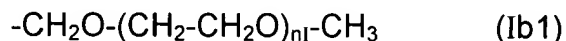


wherein  $R_{fl}$  is a fluoroalkyl  $C_3$ - $C_{30}$  radical;  $pl$  is 1 or 2; Q is bivalent aliphatic  $C_1$ - $C_{12}$  or aromatic  $C_6$ - $C_{12}$  linking bridge; Q is optionally substituted with a substituent selected from heteroatoms, N, O, S, or carbonylimino, sulphonylimino or carbonyl

groups; Q can be unsubstituted or it is bound to substituents selected from the following: halogen atoms, hydroxyl groups, C<sub>1</sub>-C<sub>6</sub> alkyl radicals.

41. (Previously Presented) The method according to claim 17, wherein the number average molecular weight is in the range 2,000 – 9,000.

42. (New) The method according to claim 17, wherein when in the formula (Ib) X<sub>0</sub> = OH, b = 1, R<sub>1</sub><sup>A</sup> = R<sub>2</sub><sup>A</sup> = H, Y<sub>0</sub> is a hydrophilic group having formula



wherein nI is an integer in the range 3-20.